

What is claimed is:

1.

A method of manufacturing a thin film resistor with a moisture barrier comprising:  
depositing a metal film layer on a substrate; and  
depositing a layer of tantalum pentoxide film overlaying the metal film layer.

2.

The method of claim 1 wherein the step of depositing a layer of tantalum pentoxide is sputtering tantalum pentoxide film.

3.

The method of claim 1 wherein the metal film layer is an alloy containing nickel. *a*

4.

The method of claim 1 wherein the metal film layer is an alloy containing chromium.

5.

The method of claim 1 wherein the metal film layer is a nickel-chromium alloy.

6.

The method of claim 1 further comprising:  
depositing a passivation layer overlaying the metal film layer, the tantalum pentoxide film layer overlaying the passivation layer.

7.

*Sub B1*  
A thin film resistor comprising:  
a substrate;  
a metal film layer attached to the substrate; and  
a tantalum pentoxide layer overlaying the metal film layer, the tantalum pentoxide layer providing a barrier to moisture, the tantalum pentoxide layer not over layed by an oxidation process.

8.

The thin film resistor of claim 7 wherein the metal film layer is an alloy containing nickel.

9.

The thin film resistor of claim 7 wherein the metal film layer is an alloy containing chromium.

10.

The thin film resistor of claim 7 wherein the metal film layer is a nickel-chromium alloy.

11.

The thin film resistor of claim 7 further comprising a passivation layer overlaying the metal film layer, the tantalum pentoxide layer overlaying the passivation layer.

12.

The thin film resistor of claim 7 wherein the tantalum pentoxide layer is overlaid by sputtering.

13.

A nickel-chromium alloy thin film resistor comprising:  
a substrate;  
a nickel chromium alloy film layer attached to the substrate;  
and  
a tantalum pentoxide layer overlaying the nickel-chromium alloy film layer.

14.

The nickel chromium alloy film resistor of claim 13 further comprising a passivation layer overlaying the nickel-chromium alloy film layer, the tantalum pentoxide layer overlaying the passivation layer.